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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,595	05/25/2006	Rainer Scharp	SCHARP-9 PCT	6941
25889	7590	05/01/2008		
COLLARD & ROE, P.C. 1077 NORTHERN BOULEVARD ROSLYN, NY 11576			EXAMINER KIRKSEY, DONTE R	
			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/578,595	Applicant(s) SCHARP, RAINER	
	Examiner DANTE KIRKSEY	Art Unit 4193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :05/08/2006, 05/25/2006, 04/07/2008.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 1) Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mishima (USP 4,696,224) in view of Sugiura (USP 6,530,149) and Gabriel (USP 6,820,582) and Matsuoka (USP 5,645,028) and Kruse (USP 6,279,455).

With respect to claim 1, Mishima teaches a method for producing a piston (see Mishima, Fig 1, 1) for an internal combustion engine,

- having an essentially cylindrical base body (see Mishima, Fig 1, cylindrical base of entire Fig 1) made of aluminum (Mishima, Col 1, Lines 37-38), whose one face forms a piston crown (see Mishima, Fig 1, center crown of 1),
- having pin bosses (see Mishima, Fig 1, 3) with pin bores (see Mishima, Fig 1, 4) disposed on the underside of the base body (see Mishima, Fig 1, cylindrical base of entire Fig 1), facing away from the piston crown (see Mishima, Fig 1, center crown of 1), and having skirt elements (see Mishima, Fig 1, 9) that connect the pin bosses (see Mishima, Fig 1, 3) with one another.

Mishima does not teach - the base body is produced using the forging method, whereby a recess (22) is formed into the radially outer region of the piston crown (5). However, Mishima in view of Sugiura teaches the base body (see Mishima, Fig 1, cylindrical base of entire Fig 1) is produced using the forging method (see Sugiura, title),

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whereby a recess (see Sugiura, Fig 3, 180) is formed into the radially outer region (see see Sugiura, outer region of crown in Fig 3, 164) of the piston crown (see Sugiura, Fig 3, 164). Therefore it would have be obvious to one skill in the art at the time the invention was made to modify Mishima to use a forging method, whereby a recess (22) is formed into the radially outer region of the piston crown (see Sugiura, Fig 3, 164) for the purpose of forming the piston cylinder.

Mishima in view of Sugiura does not teach – the free shanks (13, 14) of an essentially toroid- shaped cooling channel (15), which is C-shaped in cross- section and radially open to the outside, and produced from sheet steel.

Gabriel teaches the free shanks (see Gabriel, Abstract Lines 5-15 and Fig 1, 8) of an essentially toroid- shaped cooling channel (see Gabriel Fig 1, 6), which is C-shaped in cross- section and radially open to the outside, and produced from sheet steel (see Gabriel, Col 1, Lines 64-67). Therefore it would be obvious to one skill in the art at the time the invention was made to modify Mishima in view of Sugiura to have the free shanks (13, 14) of an essentially toroid- shaped cooling channel (15), which is C-shaped in cross- section and radially open to the outside, and produced from sheet steel for the purpose of forming piston cylinder.

Mishima in view of Sugiura and Gabriel does not teach the free shanks (13, 14) are welded onto a cylindrical surface (12) of a ring insert (10) made of NiResist, which surface lies radially on the inside, that the ring insert (10) provided with the cooling channel (15) is cast into a ring element (6) made of aluminum, using the composite casting method, which ring element is given such a shape, in this connection, that "it fits

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into the recess (22) , that the ring element (6) is fitted into the recess (22) and welded to the base body (4).

Matsuoka teaches the welding (see Matsuoka, Col 19, Lines 35-36) a ring insert (see Matsuoka, Col 19, Lines 30-35) made of NiResist (see Matsuoka, Col 19, Lines 30-35), which surface lies radially on the inside, that the ring insert (see Matsuoka, Col 19, Lines 30-35) provided with the cooling channel (see Gabriel Fig 1, 6) is cast into a ring element (see Matsuoka, Col 19, Lines 30-35) made of aluminum, using the composite casting method, which ring element (see Matsuoka, Col 19, Lines 30-35) is given such a shape, in this connection, that "it fits into the recess (see Sugiura, Fig 3, 180), that the ring element (see Matsuoka, Col 19, Lines 30-35) is fitted into the recess (see Sugiura, Fig 3, 180) and welded to the base body (4).

Therefore it would be obvious to one skill in the art at the time the invention was made to modify Mishima in view of Sugiura and Gabriel and Matsuoka to have the free shanks (13, 14) are welded onto a cylindrical surface (12) of a ring insert (10) made of NiResist, which surface lies radially on the inside, that the ring insert (10) provided with the cooling channel (15) is cast into a ring element (6) made of aluminum, using the composite casting method, which ring element is given such a shape, in this connection, that "it fits into the recess (22) , that the ring element (6) is fitted into the recess (22) and welded to the base body (4) for the purpose of attaching the free shanks to the cylindrical surface.

Mishima in view of Sugiura and Gabriel and Matsuoka does not teach that the piston (1) is given its final shape by means of a cutting production method. Kruse

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teaches a method of cutting (see Kruse, Col 9, Lines 1-4). Therefore it would be obvious to one skill in the art at the time the invention was made to modify Mishima in view of Sugiura and Gabriel and Matsuoka and Kruse to use a cutting production method to give a piston its final shape for the purpose of shaping the piston.

With respect to claim 2, Mishima in view of Sugiura and Gabriel and Matsuoka and Kruse teaches a method for producing a piston (see Mishima, Fig 1, 1) for an internal combustion engine, wherein a recess (see Sugiura, Fig 3, 164) that is rectangular in cross-section is formed into the radially outer edge region of the piston crown (see Sugiura, Fig 3, 164), and that the ring element (see Matsuoka, Col 19, Lines 30-35) is given a shape that is rectangular in cross-section, so that it fits into the recess (see Sugiura, Fig 3, 164).

With respect to claim 3, Mishima in view of Sugiura and Gabriel and Matsuoka and Kruse teaches a method for producing a piston (see Mishima, Fig 1, 1) for an internal combustion engine, wherein the ring element (see Matsuoka, Col 19, Lines 30-35) is given such a shape that its surface that lies radially on the inside forms a weld seam (see Matsuoka, weld seam on Fig 13, 3), with the base body (see Mishima, Fig 1, cylindrical base of entire Fig 1), that narrows conically towards the piston crown (see Sugiura, Fig 3, 164).

With respect to claim 4, Mishima in view of Sugiura and Gabriel and Matsuoka and Kruse teaches a method for producing a piston (see Mishima, Fig 1, 1) for an internal combustion engine, wherein the ring element (see Matsuoka, Col 19, Lines 30-35) is given such a shape that its surface that lies axially in the direction of the pin bore (see

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Mishima, Fig 1, 4) forms a weld seam (see Matsuoka, weld seam on Fig 13, 3), with the base body (see Mishima, Fig 1, cylindrical base of entire Fig 1), that has an orientation that deviates from the radial axis direction.

Conclusion

2) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chellappa et al. (USP 6,029,346) teaches a method for producing a piston cylinder with a crown and a skirt.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DONTE KIRKSEY whose telephone number is (571)270-3792. The examiner can normally be reached on 8 a.m to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Nguyen can be reached on 5712721753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

drk

/Taghi T. Arani/
Supervisory Patent Examiner, Art Unit 4193
4/30/2008